

What is claimed is:

- 1 1. A method for forming a shiplap edge in a duct board, comprising the steps of:  
2 (a) molding a shiplap edge in a first duct board made of mineral fiber or mineral wool, the  
3 molded shiplap edge having a molded edge thickness; and  
4 (b) machining the molded shiplap edge to a desired machined edge thickness that is less than  
5 the molded edge thickness.
- 1 2. The method of claim 1, wherein the molding step includes forming a region of increased  
2 density fibrous material in the shiplap edge.
- 1 3. The method of claim 1, wherein the molding step includes compressing an edge portion  
2 of the first duct board from a board thickness to the molded edge thickness, thereby to form the  
3 shiplap edge.
- 1 4. The method of claim 3, wherein a ratio of the molded edge thickness to the board  
2 thickness is about 1.25:2.
- 1 5. The method of claim 4, wherein a ratio of the machined edge thickness to the molded  
2 edge thickness is about 1:1.25.
- 1 6. The method of claim 1, further comprising:  
2 molding a shiplap edge in a second duct board made of mineral fiber or mineral wool  
3 using a same mold that is used to perform step (a), wherein:  
4 the first and second duct boards have different board thicknesses from each other,  
5 the machined edge thickness of the shiplap edge of the first duct board is about one half  
6 of the board thickness of the first duct board, and  
7 a molded edge thickness of the shiplap edge of the second duct board is about one half of  
8 the board thickness of the second duct board.

- 1 7. The method of claim 6, further comprising changing a height of the mold between  
2 molding the shiplap edge of the first duct board and molding the shiplap edge of the second duct  
3 board.
- 1 8. The method of claim 6, wherein the mold is attached to a portion of a curing oven that  
2 determines the thickness dimensions of the first and second duct boards, and through which the  
3 first and second duct boards pass, the method further comprising changing a height of the portion  
4 of the oven between molding the shiplap edge of the first duct board and molding the shiplap  
5 edge of the second duct board.
- 1 9. The method of claim 8, wherein the height changing step includes changing the height of  
2 the portion of the oven by a distance that is equal to a difference between the board thickness of  
3 the first duct board and the board thickness of the second duct board.
- 1 10. The method of claim 8, further comprising using a constant height second mold attached  
2 to a portion of the oven that does not change height, to form an additional shiplap edge in the  
3 first duct board opposite the first shiplap edge.
- 1 11. The method of claim 6, wherein a cutter or grinder is attached to a fixture through which  
2 at least the first duct board passes.
- 1 12. The method of claim 11, further comprising  
2 changing a height of the fixture; and  
3 molding a shiplap edge in a third duct board having a third board thickness different from  
4 the thicknesses of the first and second duct boards, using the same mold that is used to perform  
5 step (a).
- 1 13. The method of claim 1, wherein the machining step comprises grinding.
- 1 14. Apparatus for forming a shiplap edge in a duct board, comprising:

2 at least one mold for molding a shiplap edge in a first duct board made of mineral fiber or  
3 mineral wool, so that the molded shiplap edge has a molded edge thickness; and  
4 a cutter or grinder for machining the molded shiplap edge to a desired machined edge  
5 thickness less than the molded edge thickness.

1 15. The apparatus of claim 14, wherein the mold is sized and shaped to compress an edge  
2 portion of the first duct board from a board thickness to the molded edge thickness, thereby to  
3 form the shiplap edge.

1 16. The apparatus of claim 14, wherein a height of the mold is adjustable relative to a bottom  
2 surface of the first duct board.

1 17. The apparatus of claim 16, further comprising a fixture through which the first duct board  
2 passes, at least a portion of the fixture having an adjustable height, the cutter or grinder being  
3 attached to the portion of the fixture.

1 18. The apparatus of claim 16, further comprising a curing oven that determines the thickness  
2 dimensions of the first and second duct boards, and through which the first duct board passes, at  
3 least a portion of the oven having an adjustable height, the mold being attached to the portion of  
4 the oven.

1 19. The apparatus of claim 18, wherein:  
2 the oven manufactures duct boards of at least two different board thicknesses, and  
3 the height of the portion of the oven is adjustable by at least a distance that is equal to a  
4 difference between two different board thicknesses of duct boards that are passed through the  
5 oven.

1 20. The apparatus of claim 14, further comprising a second mold that does not change height,  
2 used to form an additional shiplap edge in the first duct board opposite the first shiplap edge.

1 21. Apparatus for forming a shiplap edge in a duct board, comprising:

2           at least one mold for molding a shiplap edge in a first duct board made of mineral fiber or  
3 mineral wool, so that the molded shiplap edge has a molded edge thickness; and  
4           means for machining the molded shiplap edge to a desired machined edge thickness less  
5 than the molded edge thickness.

1 22.    A duct board material, comprising:  
2           a board of mineral fiber or mineral wool, the board being formed by molding a shiplap  
3 edge in a first duct board made of mineral fiber or mineral wool, so that the molded shiplap edge  
4 has a molded edge thickness, and machining the molded shiplap edge to a desired machined edge  
5 thickness that is less than the molded edge thickness.

1 23.    The duct board material of claim 22, wherein an amount of material machined from the  
2 board to achieve the desired machined edge thickness is substantially less than one half of a  
3 board thickness of the duct board.

1 24.    The duct board material of claim 22, wherein a density of the material in the molded  
2 shiplap edge is substantially greater than a density of the material in the remainder of the first  
3 duct board.